BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

In the Matter of	)	WT Docket No. 99-328
	)	
Petition for a Declaratory Ruling On 911 Call Processing Modes	)	
	)	

EX PARTE RESPONSE OF WIRELESS CONSUMERS ALLIANCE, LISA BASS, STEPHEN J. HUBBARD, ALYSA LIFF, JED BECKER, CHARLES FASANO, DONNA CLARKE, JULIE MCMURRY, ARMANDO LAGE, VISHAL AGGARWAL AND BRIDGET BYRNE, TO JOINT PETITION FOR DECLARATORY RULING

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Dated: November 25, 2003

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Respondents Wireless Consumers Alliance ("WCA") *et al.*[1] submit this response to the Joint Petition for Declaratory Ruling (the "Joint Petition") filed on October 14, 2003 by sixteen cellphone manufacturing and service companies who are defendants in a related Court case in the United States District Court for the Northern District of Illinois (they are collectively referred to hereinafter as "Defendants").[2]

INTRODUCTION AND SUMMARY

Defendants' Joint Petition is both procedurally improper and substantively without merit. Its ostensible purpose is to request the Commission to respond to certain questions posed by Judge John F. Grady of the U.S. District Court for the Northern District of Illinois under the doctrine of primary jurisdiction regarding the requirements for 911 analog cellphone calls announced in the *Second Report and Order* in the Commission's *E911* Proceeding.[3] However, the Court's questions *were already* before the Commission at the time the Joint Petition was filed. Indeed, on October 6, 2003, eight days before Defendants filed their Joint Petition, WCA and certain cellphone subscribers (collectively, the "Cellphone Subscribers") filed a Petition for Declaratory Ruling, informing the Commission of the Court's questions and asking the agency to respond. That Petition is still pending. Defendants' Joint Petition is therefore superfluous and should be dismissed as moot.

If the Commission elects to consider the Joint Petition on its merits, it should deny the relief requested therein. Defendants ask the Commission to endorse an interpretation of its requirements for analog 911 calls employing the A/B Roaming-

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[1] Respondent WCA is a non-profit organization that serves the interests of consumers of wireless services. Respondents Lisa Bass, Stephen J. Hubbard, Alysa Liff, Jed Becker, Charles Fasano, Donna Clarke, Julie McMurry, Armando Lage, Vishal Aggarwal and Bridget Byrne are cellphone subscribers.

[2] Petitioners include fourteen cellphone manufacturers, including Nokia Inc., Motorola, Inc., Ericsson Inc., Kyocera Wireless Corporation and Samsung Telecommunications America LLP, as well as two cellphone service providers, AT&T Wireless Services, Inc. and Sprint Spectrum LP d/b/a Sprint Spectrum PCS.

[3] *Second Report and Order* in *Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, 14 F.C.C.R. 10954 (June 9, 1999) (hereinafter, the "*Second Report and Order*").

Intelligent Retry ("A/B-IR") call completion method that is directly at odds with both the language and spirit of the *Second Report and Order*. Specifically, Defendants ask the Commission to tell the Court that the only thing a cellphone operating in analog mode under the A/B-IR method is required to do to satisfy the "17-second" condition imposed in the *Second Report and Order* is to switch to the nonpreferred carrier if the system fails to *assign a voice or traffic channel* within that time period.

However, the *Second Report and Order* itself decisively refutes Defendants' contentions. It states that any cellphone company that adopts the A/B-IR method for 911 cellphone calls must ensure that its cellphones switch to the nonpreferred system "if the preferred carrier has not ***successfully delivered the call to the landline carrier*** within 17 seconds after the call is placed." *Id.*, ¶41 (emphasis added). The *Second Report and Order* makes clear that the purpose of this requirement is to combat a phenomenon called "lock-in," which occurs when a voice channel has been assigned but the handset's signal is too weak to permit an actual conversation to take place. *Id.*, ¶¶16, 37 & n.52. Accordingly, as the *Second Report and Order* explicitly states, the mere assignment of a voice or traffic channel within 17 seconds ***does not*** satisfy the rule, because even if a voice channel has been assigned, "lock-in" can still occur. *Id*., n.52.

Although the purported purpose of the Joint Petition is to ask the Commission to tell the Court how the requirements enunciated in the *Second Report and Order* should be interpreted, the Joint Petition willfully ignores or downplays the salient provisions of the *Second Report and Order* and the reasons the Commission gave therein for adopting its 911 cellphone requirements. Thus, the Joint Petition barely mentions lock-in. Moreover, the language of Paragraph 41 and footnote 52 of the *Second Report and Order*, where the Commission explains with precision what has to be accomplished in 17 seconds, receives remarkably short shrift in the Joint Petition. The only thing Defendants can summon up to say about these critical passages from the *Second Report and Order* is that because the Court found them to be confusing, they must be ambiguous. However, the short answer

is that while Paragraph 41 and footnote 52 may seem confusing to a person unschooled in cellphone technology – a person such as the federal judge who made the referral to the Commission – the Commission knew exactly what it meant when it wrote Paragraph 41 and footnote 52, and ***so did Defendants***.

Contrary to Defendants' arguments in the Joint Petition, the industry's failure to comply with the Commission's requirements did not result from a lack of understanding of what was required of it. Rather, Defendants made a deliberate and conscious decision not to comply. Now that their violations have been exposed in the litigation that spawned the Court's referral, they want the Commission to rewrite history and sacrifice the safety of cellphone callers to protect the industry from the economic consequences of its defiance of Commission requirements.

Instead of addressing the salient provisions of the *Second Report and Order* in a straightforward way, the Joint Petition:

- indulges in *ad hominem* attacks on WCA and impugns the integrity of the highly experienced and respected expert who conducted the tests that revealed the industry's non-compliance;

- takes comments made by WCA during the rulemaking process out of context in an effort to paint the utterly false and ridiculous picture that WCA itself endorsed Defendants' revisionist view that the assignment of a voice channel within 17 seconds meets the Commission's standards;

- seeks to reargue the merits of – and ultimately reverse -- the policy decisions and technical judgments made by the Commission in 1999, when it adopted the *Second Report and Order*, by asserting that the requirements, when adopted, were unwise or infeasible;

- twists and distorts the language of letters issued by the Commission's staff to suggest that the staff has overturned the requirements imposed by the

Commission in the *Second Report and Order*, even though the staff did not and could not do so; and,

- begs the Commission in substance to refrain from enforcing its anti "Lock-in" rules on the grounds that retrofitting the cellphones that the industry has manufactured in knowing and deliberate violation of the Commission's requirements over the last four years would impose an economic burden on the industry.

As we demonstrate below, Defendants' claims that the 17-Second condition was unwise or infeasible to implement or would require sweeping changes in technology are palpably incorrect. The 17-second requirement was not only necessary and appropriate to combat the established (and fatal) perils of "lock-in" but was also sensible and practical when made. However, the issue is not whether it was wise or unwise for the Commission to impose the 17-second requirement. What the court has asked the Commission is *what the 17-second requirement means*. Contrary to the dissembling and disingenuousness proffered by Defendants, Respondents submit that the correct answer to the Court is clear – that merely assigning a voice channel is not enough; cellphones must switch to the non-preferred carrier if a call has not been *delivered to the landline carrier* within 17 seconds.

A recent survey by Consumers Union found that 15% of persons who called 911 from a cellphone had trouble connecting and 4% never connected at all.[4] There are an average of 172,000 911 calls made by cellphones each day.[5] Accordingly, based on the

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[4] *CTIA Daily Report*, October 7, 2003, attached as Exhibit 1 hereto. The same source reports that one-third of all 911 calls are made from a cellphone. *Id.*

[5] Thus, a May 22, 2003 Press Release issued by the Cellular Telecommunications and Internet Association, entitled, "CTIA Reminds Drivers to Use Wireless Phones Safely This Memorial Day Weekend" May/2003http://stageweb.wow-com.com/news/press/body.cfm?record_id=1265, states that wireless calls to 911 or other emergency numbers have reached 156,000 per day or 108 calls per minute as of April 22, 2002. Because the number of cellphone subscribers increased 10 percent from June 2002 to June 2003 (*see* http://www.wow-com.com/search/articles.cfm?ID=1317), it is fair to assume that the number of calls to 911 or other emergency numbers made from a wireless phone increased during this time period by the same percentage.

Consumers Union's findings, more than 25,700 such calls per day, or more than 9.3 million per year, experience difficulty in making a connection, while 6,880 such calls per day, or more than 2.5 million per year, fail to be connected altogether.[6] The interpretation proposed by the Cellphone Companies, if adopted by the Commission, would put the safety of all of these callers at risk.

ARGUMENT

A. Defendants' Self-Serving Interpretation of the Commission's 911 Requirements is Erroneous

In their Joint Petition, Defendants in substance ask the Commission to tell Judge Grady, in response to his primary jurisdiction referral, that the *Second Report and Order* did not mean what it said when it required 911 calls transmitting in analog mode to seek completion through the non-preferred system where the call has not been delivered to the landline carrier within 17 seconds. Rather, Defendants urge the Commission to inform the Court that *the mere assignment of* a *voice channel*, even where the signal is so weak that the caller cannot make a voice transmission on that channel, is sufficient to satisfy the Commission's requirements. However, this interpretation is directly contrary to both the rationale and the explicit language of the *Second Report and Order*. Moreover, although the Joint Petition contends that subsequent orders made by the Wireless Telecommunications Bureau (WTB) regarding Nokia's and Ericsson's processes[7] eliminated or modified the obligations of the companies at issue to comply with the 17-second requirement, those orders not only could not do so but *do not do so*: they both *expressly state* that the conditions attached to A/B-IR by the Commission in the *Second*

[6] The problem of unconnected 911 cellphone calls is not limited to rural and suburban areas. At a recent press conference, New York's Mayor Bloomberg cited a study stating that more than 100,000 911 calls did not go through in 2002 due to mobile-phone failure, and asked cellphone customers to report the lost-call specifications, by intersection and service provider. B McGrath, *Call Log: I'm Losing You*, The New Yorker, November 10, 2003, p. 48.

[7] *See 911 Call* Processing *Modes*, 15 F.C.C.R. 1911 (2000) (the "*Nokia Order*"); *911 Call Processing Modes* , 15 F.C.C.R. 15671 (2000) (the "*Ericsson Order*").

Report and Order are still applicable – *i.e.*, cellphone 911 calls must be transferred if they have not been delivered to the landline carrier within 17 seconds.

1. Defendants' Interpretation Ignores Both the Rationale and the Language of the Second Report and Order and Would Expose Cellphone Callers to the Very Lock-In Dangers That the 17-Second Condition Was Designed to Combat

The Second Report and Order was intended to combat "lock-in," which occurs when a voice channel is assigned to the handset by the base station over the control channel but, due to weak signal strength from the handset to the base station, no voice communication is possible over that voice channel. Once the handset tunes to the assigned voice channel and begins sending back a supervisory audio tone,[8] the handset immediately enters the "Conversation State"[9] and considers the call completed by the handset even in instances where no voice conversation is possible. That was the state of the art when WCA first alerted the Commission to the problem of "lock in" and the Commission commenced its rulemaking to combat it.

Three processes were proposed to combat the lock-in problem. The industry initially proposed a method called "A/B."[10] Under the "A/B" method, the cellphone will switch to the non-preferred system when there is no signal at all over the preferred channel (*i.e.*, where there are "dead zones"). This dead zone solution was an improvement but did not address the lock-in problem at all. The industry later added "Intelligent Retry," which required the handset to continue to try to connect the call on the theory that the caller might be mobile and drive into an area where the call could be completed. This amended proposal is called "A/B-IR."

In the *Second Report and Order*, the Commission found that the A/B-IR method would improve 911 call completion. *Id.*, ¶34. However, the Commission concluded that

[8] See EIA-553 at 2.6.4.2 "Confirm Initial Voice Channel."

[9] *See* EIA-553 at 2.6.4.4 "Conversation".

[10] Cite to either the Second Report and Order or, if not there, defendants' comments from that proceeding.

additional safeguards were necessary to ensure that A/B-IR would actually achieve the Commission's goals. The Commission found that under the A/B-IR method, if it were to be adopted without conditions, the initial access efforts on the preferred carrier's facilities might consume so much time that the ensuing delays "could lead callers to terminate 911 calls that eventually would have been connected." *Id.*, ¶40. Delays of this magnitude, the Commission observed, would, in effect, be a form of "lock-in." *Id.*, ¶37.

Furthermore, the Commission observed that ***as proposed***, the A/B-IR method

> …treats a call as completed when the handset is in what is termed "Conversation State." However, at this stage the handset has not necessarily been connected with the wireless carrier or the 911 PSAP [Public Safety Answering Points].

Second Report and Order, ¶36. In other words, the Commission found the A/B-IR method, ***as proposed***, inadequate because it treated a call as having been completed when a voice channel had been assigned but the handset's voice channel transmission had not been received at the base station. *Second Report and Order*, n. 52. Under such circumstances, the Commission observed, the caller and the 911 operator would not be able to communicate with each other. *Id.*

To address these problems, the Commission allowed cellphone carriers and manufacturers to employ the A/B-IR method *only* if they complied with two conditions to combat "lock-in":

- The Commission required cellphone handsets to provide "effective feedback," in either visible or audible form, "to inform the user when 911 call processing is underway and has not finished." *Second Report and Order* at ¶39; and

- The Commission directed that "if the preferred carrier has not successfully delivered the call ***to the landline carrier*** within 17 seconds after the call is placed," the cellphone must automatically retry the call on a competitor's system. *Id.* at ¶41 (emphasis added).

The Commission pointed out that under existing technical rules,[11] the handset must scan for a control channel and receive a voice channel assignment from the base station within 12 seconds after pressing "Send."[12] After the voice channel assignment occurs, the base station must drop the voice channel if it does not receive the supervisory audio tone (SAT) from the handset within 5 seconds.[13] *Second Report and Order*, ¶41. The 17-second figure adopted by the Commission was therefore far from an arbitrary number – rather, it was the sum of the 12-second maximum interval allowed for voice channel assignment and the 5 second limit applicable to receipt of the SAT transmission under the Commission's *pre-existing* technical rules. In sum, the Commission found that the A/B-IR method could address the lock-in problem by applying existing technical rules and procedures. The 17-second period was the maximum acceptable delay before switching to the non-preferred channel. Because even this delay may cause the caller to hang up and try his call again, the Commission also provided that the handset must notify the caller that the emergency call was being processed.

The Joint Petition largely ignores the rationale of the *Second Report and Order*. The Joint Petition does not even talk about "lock-in" or whether the rule, under Defendants' interpretation, would combat lock-in. (It would not.) Indeed, under the interpretation of the Rules advocated in the Joint Petition, the calling method adopted by those companies is in all material respects the same as the unmodified A/B-IR method that Defendants proposed in their comments in the *E911 Proceeding* and that the Commission, in Footnote 52 of the *Second Report and Order*, ***explicitly found inadequate.*** Instead of discussing "lock-in," the Joint Petition floats the theory that the conditions imposed on A/B-IR by the Commission were designed to help ensure that

[11] *See* EIA-553 "Mobile Station – Land Compatibility Specification."

[12] *See* EIA-553 at 2.6.3.1 "Set Access Parameters."

[13] *See* EIA-553 at 2.6.4.1 "Loss of Radio-Link Continuity" and 3.6.4.2 "Initial Voice Channel Confirmation."

"*call setup*" is not delayed. Among the many problems with this theory is that the *Second Report and Order*, in discussing the reasons for the rule, explicitly and repeatedly mentions lock-in rather than "call setup," which is simply the process of voice channel assignment and the sending of a SAT by the handset.

Indeed, the Commission adopted the requirements because, as a result of lock-in, people were *dying* when their 911 calls failed to go through. *Second Report and Order*, ¶29. The Commission was not merely pursuing an abstract desire to make "call setup" easier. Rather, it was trying to ensure to the extent possible that 911 calls would actually be connected so that the caller could seek help.[14] During the proceeding that led up to the adoption of the rule, the Commission heard from victims who had suffered (or whose families had suffered) serious injury or death as a result of lock-in. Among the harrowing stories that the Commission heard were that of Marcia Spielholz, who, while driving in Los Angeles, was chased by carjackers for 10 minutes while she frantically and unsuccessfully dialed 911 over and over again. Had her call been connected, a police helicopter could have been on the scene within one minute. Because the call failed to go through due to lock-in, the carjackers eventually caught Ms. Spielholz and shot her in the face. Ms. Spielholz told her story to the Commission and the press while the rulemaking was under consideration. The case of the Lechuga family was even more tragic – after their car skidded off the road in a rural area, Mrs. Lechuga, seriously injured, tried seven times to call for help but could not get through because of lock-in. Eventually, her children froze to death while still strapped in their seats, and she was eaten by wild animals. Had the anti-lock-in 17-second condition been in effect, Mrs. Lechuga and her

[14] Thus, the Ad Hoc Alliance for Public Access to 911 that represented consumer interests in the rulemaking included not only general consumer organizations such as the Utility Consumer Action Network, the Center for Public Interest Law and the Office of Communications of the United Church of Christ but also organizations directly concerned about and affected by 911 call completion failures, including Crime Victims United, Justice for Murder Victims and the World Institute on Disability. *Second Report and Order* at 6 n.5.

children may have survived. Mrs. Lechuga's sister came to Washington, D.C. and appeared before the Commission while the proceeding that led to the *Second Report and Order* was under consideration.

The victims' stories proved that "lock-in" is a killer. It was exceptionally painful to the victims to undergo the ordeal of telling their stories. But their self-sacrifice in doing so dramatized the problem for the agency and the public and led to the adoption of requirements, in the *Second Report and Order*, that were expressly and deliberately designed to combat lock-in. Against this tragic and painful background, therefore, WCA and Consumers Union were shocked to find out, in 2002, that the industry was deliberately ignoring those rules and had been doing so since their adoption.[15]

Defendants' treatment of the explicit language of the *Second Report and Order* is even more cavalier than their approach to its rationale. They do not even attempt a substantive discussion of the relevant language of the *Second Report and Order* until page 25 of the Joint Petition. When they do, they ignore the clear language of ¶41 and footnote 52 that sets forth explicitly what the 17-second anti-lock-in requirement is, what constitutes compliance with it and what *does not* constitute compliance with it. In an attempt to avoid this explicit language, they create out of whole cloth the theory that the Commission intended the assignment of a voice channel to be a "proxy" for the delivery of the signal to the landline carrier – a concept that not only is not found anywhere in the

[15] With exquisite insensitivity, the Joint Petition suggests that even though Defendants have not complied with the Commission-imposed conditions that would have saved Ms. Spielholz's health and the Lechuga family's lives, the Commission should excuse their non-compliance and pull their chestnuts from the judicial fire because no additional victims of lock-in have come forward *recently*. The Joint Petition suggests that the lack of recent appearances before the Commission by victims of lock-in or their families means that nobody in America is any longer being injured or killed as a result of the failure of a 911 cellphone call to go through. A more likely reason for the lack of recent visits by victims is that there has been no rulemaking proceeding addressing the lock-in problem since the Commission issued the *Second Report and Order*. Since the only issue before the Commission now is what the agency's existing requirements mean, it would seem to be unnecessary for additional victims of lock-in to visit the Commission and make themselves known to the press and the public. However, WCA is prepared, should it prove necessary, to take up the gauntlet thrown down by the industry. The point, though, is this: People died and requirements were imposed by an agency of the United States government to protect the public from that peril. How many deaths do there have to be before those requirements are complied with?

Second Report and Order but is expressly contradicted in footnote 52 of the document, where the Commission states that mere assignment to a voice channel within 17 seconds will not satisfy the Commission's requirements.

2. Nothing in the *Nokia* or *Ericsson Orders* relieves any of the Cellphone Companies of their obligations to comply with the 17-second requirement

The Joint Petition claims that the *Nokia* and *Ericsson Orders* relieved those two companies from compliance with the 17-second requirement imposed in the *Second Report and Order*, and that WCA recognized that fact at the time. That contention, however, is demonstrably false and disingenuous. In fact, both orders were approved with specific language requiring that the 17-second condition, as set forth in the *Second Report and Order*, be complied with.

Both Nokia and Ericsson asked the WTB to approve modifications of the A/B-IR method under which their handsets would seek control channels over every system in its Preferred Roaming List ("PRL"), including digital channels, before switching over to the non-preferred system. *As proposed*, the methods advocated by both Nokia and Ericsson did not incorporate the 17-second time limit on call completion set forth in the *Second Report and Order*.[16] Largely for that reason, WCA opposed both Nokia's and Ericsson's requests on the grounds that if they were granted *as proposed*, they would relieve both companies of their obligations to comply with the 17-second condition.[17] In response to criticism of Nokia's proposal, the company's counsel, in a letter to the Bureau, assured the staff that "Nokia's phones will be *designed to combat lock-in in the same manner that*

[16] *See* Ex. 2, Comments of the Wireless Consumers Alliance, Inc. in Opposition to the Nokia Application, WT Docket 99-328 (filed November 30, 1999) at 7-8; Ex. 3, Comments of the Wireless Consumers Alliance, Inc. in Opposition to the Ericsson Application, WT Docket 99-328 (filed January 18, 2000) at 7.

[17] *Id.* WCA did not object to a similar request made by Motorola because it covered a small number of handsets that were being phased out. See Ex. 4, Comments of the Wireless Consumers Alliance, Inc Recommending Conditional Approval of the Petition, WT Docket 99-328 (filed April 7, 2000) at 7

the Commission has allowed for other call completion methods."[18] Nokia's counsel added:

> Nokia would like to clarify that our multi-mode handsets will comply with the time limits for access attempts approved by the Commission for the Automatic A/B roaming-Intelligent Retry Method. In the *Second Report and Order*, the Commission stated that "the handset should seek to complete the call with the non-preferred cellular carrier if the preferred cellular carrier has not successfully *delivered the call to the landline carrier within 17 seconds after the call is placed.*" We will apply the same time limit for all channels irrespective of whether the handset is operating in the digital or analog mode.[19]

The WTB did not approve either Nokia's or Ericsson's requests *as proposed*. Rather, the Bureau inserted language into both the *Nokia Order* and the *Ericsson Order* mandating that both companies would still have to comply with 17-second condition. Thus, the Bureau approved Nokia's proposed 911 call processing method

> subject to the same two conditions that the Commission imposed in the Second Report and Order to address lock-in concerns associated with the A/B-IR call completion method. First, the handset must provide effective feedback to inform the user when 911 call processing is underway and has not finished, for example in the form of an audible tone or message in addition to a visual status report on the handset's screen.
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> * * *
>
> Second, the Commission required that handsets employing A/B-IR seek to complete the call with the non-preferred cellular carrier if the preferred cellular carrier *has not successfully delivered the call to the landline carrier within 17 seconds after the call is placed.*

911 Call Processing Modes, 15 F.C.C.R. 1911 (2000), at ¶¶4 and 5 (emphasis added).

Similarly, the Bureau approved Ericsson's proposed 911 calling method

> subject to the same two conditions imposed by the Commission for A/B-IR and by the Bureau for Nokia's method. First, the handset must provide effective feedback to the caller when 911 call processing is underway and is not finished, as Ericsson has proposed. Second, Ericsson must also satisfy the 17 second condition.

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[18] *See* Ex.5, Letter dated December 30, 1999, from David Siddall, counsel to Nokia, Inc., to Magalie Roman Salas, Secretary of the FCC (emphasis added) at 2.

[19] *Id*. at 3-4.

911 Call Processing Modes, 15 F.C.C.R. 15671 (2000), at ¶6.

The Joint Petition leaves the demonstrably false impression that the Bureau granted the *Nokia* and *Ericsson Orders as proposed*, without any modifications, and that WCA criticized the *Nokia* and *Ericsson Orders as issued* on the grounds that they failed to comply with the condition that the call must be routed to the nonpreferred carrier if it has not been delivered to the landline carrier within 17 seconds. *E.g.*, Joint Petition, at 10 n.29. Neither of those propositions is true. As noted above, the requests were granted only with modifications that preserved the 17-second condition. Moreover, WCA did not criticize either order *as issued* on that ground, because neither order permitted calls to be treated as completed merely upon the assignment of a voice channel.

Defendants also argue that the *Nokia* and *Ericsson Orders* eliminated the 17-second condition by referring to what must be done in 17 seconds as "access attempts." Without any technical, legal or evidentiary authority, Defendants brazenly assert that the phrase "access attempts" as used in the *Nokia* and *Ericsson Orders* "refer[s] to handset attempts to access the wireless network *for assignment of a voice or traffic channel*." Joint Petition, at 10 n.29. But that is a sheer fabrication by Defendants. There is nothing in the orders, or indeed in the submissions by the parties leading up to the issuance of the orders, that states or even implies that the phrase "access attempts" means anything other than attempts to complete a call. Indeed, the language quoted above, which comes from those same orders, makes clear that what Nokia and Ericsson were required to do within 17 seconds under their modified call completion methods was no different from what the Second Report and Order compelled all cellphone companies to do within that time – deliver the call to the landline carrier.

The Joint Petition suggests that WTB was authorized to make changes to the 911 calling rules pursuant to a delegation from the Commission. However, the only delegation the Commission made to the Bureau in this connection was to "consider and approve, deny or approve with modifications new or revised call processing modes."

Second Report and Order, ¶97. That delegation was specifically designed to encourage "manufacturers, standards bodies, and others to explore and develop methods of *improving 911 call completion.*" *Id.*, ¶90. Nothing in the Commission's delegation authorized the Bureau to repeal or eliminate the 17-second requirement that the Commission had imposed in the *Second Report and Order*, both because the language of the delegation does not extend so far and because relaxing the standards for 911 calls would not have "improve[d] 911 call completion."

Defendants' argument that the *Nokia* and *Ericsson Orders* eliminated the 17-second condition is also baseless because the WTB never explicitly acknowledged that it was eliminating compliance with this critical requirement of the *Second Report and Order*. If the WTB intended such a drastic change in position, it would have explicitly said so as it legally required to do so. *See Texas Office of Public Utility Counsel v. FCC*, 265 F.3d 313, 322 (5th Cir. 2001)("we cannot uphold FCC's decision . . . if it represents an unexplained reversal of past FCC policy. 'While the agency is entitled to change its views on the acceptability of a [prior policy], it is obligated to explain its reasons for doing so.'") (citing *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S 29 (1983)), cert. denied sub nom. *National Ass'n of State Utility Consumer Advocates v. FCC*, 535 U.S. 986 (2002); *Huntington Hospital v. Thompson*, 319 F.3d 74, 79 (2d Cir. 2002).

Moreover, even if we were to assume *arguendo* that the Bureau, by using the phrase "access attempts" instead of some other shorthand formulation to describe what must be done in 17 seconds, intended *sub silentio* to eliminate the 17-second condition as it had been imposed by the Commission the previous year, the Bureau did not have the authority to do so. *See, e.g., Jelks v.* FCC, 146 F.3d 878, 881 (D.C.Cir. 1998) ("a subordinate body like the [FCC's Video Services Division cannot alter a policy set by the Commission itself"); *Amor Family Broadcasting Group v. FCC*, 918 F.2d 960, 962 (D.C.Cir. 1990) (decisions of the FCC bureaus are from a subordinate body of the

Commission and are not binding on it); *see also Homemakers North Shore, Inc. v. Bowen*, 832 F.2d 408, 413 (7th Cir. 1987) (fact that "minions" of the Secretary of Health and Human Services have taken different views of regulation in question is irrelevant as the Secretary's view is controlling). Moreover, a rule adopted by the Commission cannot be amended even by the Commission itself without notice and comment rulemaking. *Sprint Corp. v. FCC*, 315 F.3d 369, 374 (D.C.Cir. 2003). *See also Homemakers North Shore, Inc. v. Bowen*, 832 F.2d at 413.

3. The Letters Issued to Nokia and Ericsson by the Commission Staff have not adopted or endorsed Defendants' Interpretation of the Order

Well after the litigation was initiated in U.S. District Court, Nokia went to the WTB with the evident pretext that it was confused about the scan time for the PRL. Nokia asked the WTB whether, under the *Nokia Order*, the scan of the PRL had to occur within less than 17 seconds. The answer to the question was, of course, that the scan was required to occur within 12 seconds. *Second Report and Order*, ¶41. Accordingly, WTB sent a letter to Nokia informing it that a scan of longer than 17 seconds was too time-consuming to satisfy the Commission's requirements. Nokia then confessed that a single model took longer than 17 seconds to scan and threw itself on the mercy of the Enforcement Bureau (EFB). EFB then assessed Nokia a fine for the violation and in doing so referred to the WTB letter.

Nokia rushed this letter and order to the U.S. District Court as evidence that all that it had to do to satisfy the Commission's 911 requirements was to receive a voice channel assignment within 17 seconds. Among other things, Nokia seized on language stating that the 17-second rule was applicable to "access attempts" to argue that the only thing that had to happen within 17 seconds was the assignment of a voice channel. None of this went on public notice and the WTB letter in reply to the Nokia request appeared in the Commission's file several days before the request appeared, no doubt because

Nokia's request was not electronically filed. Ericsson followed suit and received the same dispensation by the WTB in language that thoroughly confused the Court, which was no doubt the purpose of the exercise.

Defendants now argue that these WTB letters supersede the *Second Report and Order*. However, in each instance, the WTB referred back to the anti-lock-in conditions as being applicable and effective. Accordingly, contrary to Defendants' interpretation, there is in fact nothing in either letter that would support Defendants' argument that the letters somehow repealed or modified the requirements imposed in the *Second Report and Order*.

Furthermore, even putting to one side that considerable defect in Defendants' argument, there is nothing in the staff's letters that suggests any intention to alter the requirements imposed on cellphone companies in connection with analog 911 calls. There is no evidence that the staff was aware of the bizarre interpretation that Nokia intended to place on the phrase "access attempts." The only portion of the letter that explicitly refers to the 17-second standard merely states that under Nokia's calling method, a call that fails to assign a voice channel within 17 seconds is deemed to be an unsuccessful call.[20] That is not a repeal or modification of the Commission's rules, it is a truism. *A fortiori*, any call that fails even to achieve a voice channel assignment within 17 seconds obviously will not reach the more advanced stage of delivery to the landline carrier within that time, and therefore will be and should be deemed unsuccessful. The

[20] Ex. 6, Letter dated May 30, 2003, from John B. Muleta, Chief, Wireless Telecommunications Bureau, FCC, to Robert L. Pettit, counsel for Nokia at 2.

Nokia letter stands for nothing more than that proposition.[21] The same arguments applicable to the Nokia letter also apply to the Bureau's letter to Ericsson.[22]

B. Compliance with the Commission's Requirements Was Feasible in 1999 and It is Feasible Now

Aware, perhaps, of the patent fallacies in their revisionist interpretation of the *Second Report and Order*, Defendants also argue that the rule was unwise or unworkable when made, and complain that it was not feasible for them to comply with it as written, either at the time it was adopted in 1999 or now. Again contrary to Defendants' protestations, compliance was feasible in 1999 and it is feasible now; and their argument in this regard is as false technically as it is unpersuasive legally.

First, the historical record shows that *Second Report and Order* was drafted after consultation with the industry. The Commission listened to industry concerns in adopting the requirements it imposed on cellphone companies, and *the industry assured the staff that it could and would comply.* Moreover, one of the Nokia cellphones tested by WCA and Consumers Union actually *did* comply in the sense that it switched to the non-preferred carrier when it failed to achieve call completion; the only problem is that it did not do so within 17 seconds.[23] Nevertheless, if Nokia can make a cellphone that switches to the nonpreferred system within 30 seconds, it can make a phone that does so in *17* seconds. The contention that compliance with the 17 second requirement is impossible, infeasible or would require revolutionary changes is therefore patently false.

---

[21] Grasping at straws, Defendants also argue that the staff's approval of a training program for Nokia employees presented on an ex parte basis effectively repealed the 17-second requirement. The argument virtually refutes itself. There was no action by the full Commission action and no notice and comment rulemaking associated with the "approval" of the purported training program.

[22] In addition, WCA has filed a timely petition for reconsideration of the Ericsson letter which is currently pending before the Commission, and it seems both desirable and likely that the Commission will act on the reconsideration request in conjunction with whatever action it takes on the pending petitions for declaratory relief on the 17-second issue. For that reason as well, the Ericsson letter cannot be relied on as authority for Defendants' interpretation of the Commission's 911 cellphone requirements.

[23] See Ex. 7, Declaration and Expert Report on Nokia Cell Phone Non-Compliance With 47 C.F.R. § 22.921 By Robert G. Zicker at 4-5, 11-12.

Second, the *Second Report and Order* did not mandate universal compliance with the 17-second requirement for analog 911 calls; rather, the Commission imposed the 17-second limitation *only on calls that employed the A/B-IR method of call completion*. But the Commission, in the *Second Report and Order*, also approved two *other* methods of call completion to fight lock-in – Adequate/Strongest Signal and Double Push.[24] The 17-second limitation was inapplicable to these alternative methods. It was the industry's selection of the A/B-IR method that made the 17-second limitation mandatory. Having deliberately selected A/B-IR, Defendants could have and should have abided by the 17-second requirement that the Commission imposed as a condition on the employment of that method. If they felt they could not or did not want to comply with the 17-second standard, they simply should not have used A/B-IR.

More importantly, though, Defendants' contention that complying with the 17-second condition as the Commission wrote it would have required (or would now require) radical changes to the standardized methods by which analog calls are made and accepted is absolutely false. The beauty of the 17-second requirement is that it made use of *existing* rules, *existing* technical standards and the *existing* capabilities of cellphone systems in use both then and now. When it enacted the 17- second standard, the

[24] In an apparent attempt to distract the Commission from the weakness of their arguments on the merits, Defendants indulge in *ad hominem* attacks on WCA and on Robert Zicker, the distinguished cellphone expert who designed and performed the laboratory tests that proved that the defendants had failed to comply with the Commission's anti-lock-in requirements. Defendants claim Zicker is biased against them because he wants the Commission to require everyone in the industry to adopt the Adequate/Strongest Signal method, on which he holds a patent, rather than the A/B-IR method. But Zicker's tests have nothing to do with Adequate/Strongest Signal. What he was testing for was compliance with *the A/B-IR method* – the method that the industry itself elected to use. All 33 phones that he tested failed. Even more reckless is the attack on WCA. The implication that the Joint Petition seeks to create is that WCA is biased or not credible because it hired Zicker as a consultant and because its predecessor, the Ad Hoc Alliance, advocated in the *E911* rulemaking that the Adequate/Strongest Signal approach was the best call completion method to combat lock-in. But the rulemaking is over. It ended four years ago. What is at issue is not whether one method or another should be adopted or permitted. The Commission made its choice, and it was a wise choice – the industry is authorized to use *any* of the three methods, including Adequate/Strongest Signal or the method actually adopted by the industry, the A/B-IR method. Accordingly, the industry's *ad hominem* attacks on Zicker and WCA are not only absurd and untrue but also profoundly irrelevant.

Commission foresaw, correctly, that it could be implemented without massive or expensive changes.[25]

The Joint Petition claims that the 17-second limitation as enunciated in the *Second Report and Order* would be onerous to comply with because handsets, both in 1999 and now, do not have and have never had the technological capability to "know" whether transmissions are actually received by the base station or the landline carrier. Thus, they argue, a rule that would require the handset to "know" whether or not its transmissions have been received at the base station or delivered to the landline carrier (which is the same thing) would necessitate substantial software and hardware changes, including "answer supervision" technology, and would have required revising the standards. None of this is true. When it imposed its anti-lock-in conditions, the Commission did not specify how cellphone companies were to satisfy them as a technical matter. Instead, the Commission appropriately left it up to the industry to determine how to comply. There are any number ways in which the Defendants could have complied, and could now comply, with the Commission's anti-lock-in requirements. The one posited by defendants is the most complex, the least practical and the most expensive.

Respondents will not presume to specify for defendants the technical steps that they should have taken, or should now take, to bring themselves into compliance. Nevertheless, there are certain technological building blocks on which a compliance program could have been, and still could be, constructed. Under longstanding and existing technical standards, cellphones and base stations have a 5-second timer, colloquially called a "fade timer" but officially denominated under the Commission's rules as a "Loss of Radio Link Continuity Timer." EIA-553 at 2.6.4.1. When a voice channel has been assigned, the fade timer begins to count. If it reaches 5 seconds without detecting the correct supervisory audio tone signal on the voice channel, the base station

[25] *Second Report and Order* at 57.

will drop the call; and when that happens, the handset will detect that there is no signal coming from the base station. All of this happens automatically, without a need for the handset to "know" specifically whether or not the call has or has not been delivered to the landline carrier. If the handset is still receiving a signal from the base station at the conclusion of the 5 second period after voice channel assignment, then, by definition, a communication on the voice channel from the handset to the base station has reached the base station and has been instantaneously delivered to the landline carrier's facilities.

All of this is pre-existing technology. The only innovation that the Commission introduced into this process in the *Second Report and Order* was to require the handset to attempt to complete the call on the non-preferred carrier's frequencies if there is no communication between the handset and the base station after 17 seconds, which is the sum of the maximum amount of time allotted for voice channel assignment (12 seconds) plus the maximum time for the handset to make an actual communication with the base station on the voice channel (5 seconds). When the supervisory audio tone (SAT) sent by the handset over the voice channel is received by the base station[26] will the base station switch automatically dial the called number and deliver the call to the landline system. Therefore, call delivery to the landline carrier does not occur until the base station has received the confirmation SAT from the handset. At this point in the process, the caller is able to send voice communications over the voice channel. Simply sending a supervisory audio tone (SAT) over the voice channel which is not received by the base station *is not enough* to avoid lock-in, as Defendants well know.

CONCLUSION

Defendants' Joint Petition is without merit and should be dismissed. Defendants have mischaracterized the Commission's 911 call completion requirements. The *Second Report and Order* required cellphone handsets to switch to the nonpreferred system

[26] *See* EIA 553-3.6.4.2 "Initial Voice Channel Confirmation".

whenever a 911 call operating in analog mode fails to be delivered to the landline carrier within 17 seconds. That requirement has not been repealed, eliminated or modified; indeed, the Commission and the WTB have repeatedly affirmed that the anti-lock-in provisions adopted in the *Second Report and Order* remain in effect and continue to bind cellphone companies. Moreover, those provisions are neither ambiguous nor vague.[27] The Commission's anti-lock-in provisions are as important to the public safety now as they were when they were adopted in 1999. The simple fact is the Defendants gambled that no one would test their handsets and discover that they were ignoring the Commissions' anti-lock-in requirements. Now they have lost that gamble and face a court injunction to comply.

In light of the foregoing, Respondents respectfully submit that the Commission should advise the Court that the Second Report and Order defines the following for handsets practicing the A/B-IR approved method, including any approved modifications thereof (collectively called "A/B-IR"):

1. "Call Completion" for 911 calls from A/B-IR handsets is that point in time when the base station receives the correct supervisory audio tone (SAT) from handset on the assigned voice channel.[28] The handset will recognize this event when the base station continues to transmit for longer than 5 seconds on the assigned voice channel, since the base station is required to stop transmitting if it fails to receive the SAT signal from the handset within 5 seconds.

2. "Delivery of the call to the landline carrier" for 911 calls from A/B-IR handsets will automatically occur when the base station has received the correct supervisory audio tone (SAT) from the handset on the assigned voice channel.[29]When the

[27] For that reason, Defendants' argument based on alleged failures to comply with the APA is frivolous.

[28] This event is specified in EIA-553 at 3.6.4.2 "Initial Voice Channel Confirmation" and 2.6.4.1 "Loss of Radio-Link Continuity."

[29] *See* EIA-553 at 3.6.4.2 "Initial Voice Channel Confirmation."

base station has confirmed the presence of the handset on the assigned voice channel, the call is dialed into the landline network and the audio path is connected between the handset and the landline.

3. "Exactly what must be performed by the handset in 17 seconds?" The handset has to perform and successfully complete two defined tasks using the preferred system if that system is available. The first task, after the 911 call is dialed by the user, is for the handset to obtain a voice channel assignment from the cellular base station within 12 seconds.[30] The second handset task is to confirm that the base station is actually hearing the handset on the assigned voice channel.[31] These two tasks will typically be completed in 6 to 7 seconds after the calling party presses "Send". The maximum amount of time to complete the two tasks is 17 seconds, assuming it takes the full 12 seconds allowed to obtain a voice channel assignment, followed by the 5 second period to confirm that the base station is hearing the handset on the assigned voice channel. If the handset fails to succeed in either of these tasks, it must switch to and attempt to complete the 911 call on the non-preferred system.

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[30] *See* EIA-553 at 2.6.3.1 "Set Access Parameters."

[31] This is accomplished by monitoring the transmission from the base station to assure that the transmission lasts for longer than 5 seconds. *See* EIA-553 at 2.6.4.1 "Loss of Radio Link Continuity" and 3.6.4.2 "Initial Voice Channel Confirmation."

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EXHIBIT 1

From: ctiadailynews@reply.wow-com.com
Sent: Tuesday, October 07, 2003 10:03 AM
To: rzicker@aol.com
Subject: CTIA Daily News: Calls to 911 From Cell Phones Fail to Connect

FEATURES

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TOP STORIES
Tuesday, October 7, 2003

Get the Best Value in Wireless at CTIA WIRELESS I.T. & ENTERTAINMENT 2003! Access the entire wireless data industry and gain knowledge to keep you on the cutting-edge for next to nothing. Click here to see how!

Calls to 911 From Cell Phones Fail to Connect
Research from a Consumer Reports survey found that out of 1,880 people who called 911 from their cell phones, 15 percent said they had trouble connecting, and 4 percent of those surveyed never connecting at all. A third of all 911 calls are made from cell phones, according to the Cellular Telecommunications & Internet Association (CTIA). The FCC is putting rules in place to improve emergency 911 calls from wireless phones. One rule is that when wireless phones dial 911 and the call cannot go through on its home network, it must seek another signal, even if it is a competing carrier. However, that rule only applies to analog technology, not the more popular digital technology used by networks today. The FCC must update its regulation and impose higher standards, say Consumer Reports. (Source: Consumer Reports) - more info

Verizon Needs to Focus on Wireless, Says Reporter
Verizon stock is not doing so well these days, and Wall Street Journal reporter Andy Kessler links it to its

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EXHIBIT 2

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Consideration of the Application of	**)**	**WT Docket No. 99-328**
NOKIA, Inc. for approval of certain	**)**	
911 Call Processing Methods pursuant	**)**	
to the requirements of the Second	**)**	
Report and Order in Docket 94-102	**)**	

COMMENTS OF THE WIRELESS CONSUMERS ALLIANCE, INC.
IN OPPOSITION TO THE NOKIA APPLICATION

On November 10, 1999, the Commission's Wireless Telecommunications Bureau released a public notice[1] inviting comment on Nokia, Inc.'s (Nokia) application (Application)[2] for approval of a proposed 911 call processing method (Nokia Proposal) pursuant to the requirements of the *Second Report and Order* in the Wireless E911 Rulemaking, Docket No. 94-102.[3]

The Nokia Proposal applies to its multi-mode and multi-band handsets.[4] Nokia says that its proposal "is based along the lines of Automatic A/B Roaming – Intelligent

1. DA 99-2508.
2. The Application is dated October 27, 1999 and file stamped by the Commission on November 10, 1999.
3. Revision of the Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Second Report and Order, 14 FCC Rcd 10954 (1999).
4. *Application* p. 3. The attachment to the Application states that it applies to "CDMA digital and multimode operation." § 2.0. All of Nokia's "multi-band" handsets are "multi-mode."

Retry"[5] (Automatic A/B Roaming – IR), a method approved for use with cellular systems in the *Second Report and Order*. The Nokia process is described as follows: When 911 is dialed, the Nokia handset will attempt to complete the call three times on the presently acquired system. If the call is not "completed," the handset will next scan the systems listed in its Preferred Roaming List (PRL). If the call is not "completed" after a scan of the PRL "then the mobile will try to complete the call on the other capable systems."[6]

I. Description of the *present call processing method* used by Nokia's multi-mode handsets

Nokia manufactures dual mode phones which are capable of being used in both the digital and analog (AMPS) mode on cellular systems.[7] Nokia also manufactures multi-band phones which are capable of operating on two different frequency bands, e.g. PCS 1900 Mhz and Cellular 800 Mhz. Multi-band phones that have dual mode capability on the cellular side are called "multi-mode."[8] Dual mode and multi-mode phones "automatically move to analog service where digital service is not available."[9]

"Unlike analog technology, there is no standard transmission method for digital technology. . . . this means that not every digital phone will work on every digital network."[10] For example, a CDMA multi-mode phone can operate on systems which are

5. *Application* §2.0.
6. *Application* § 4.0. See fn. 16, *infra*, for a discussion of the critical difference between the meaning of the word "completed" as used by the Commission in the *Second Report and Order* and as used by Nokia in the *Application*. Nokia also uses the words "capable" and "compatible," to mean that the handset is capable of operating on compatible digital systems, which are those that use the same digital format as the handset is equipped to use.
7. The information concerning Nokia's phones may be found at their web site – www.Nokiausa.com.
8. PCS systems do not operate in the analog mode.
9. http://www.nokiausa.com/shopnokia.
10. *Id.*

using the CDMA format but it can **not** also operate on systems which are using the TDMA or the GSM digital formats. Nokia offers multi-mode phones which are capable of operating in ***either*** CDMA/AMPS ***or*** TDMA/AMPS modes. It does ***not*** offer a phone that has CDMA/TDMA/AMPS capability.

Nokia's phones include PRL capability, which is used by the carrier to restrict the user's access to certain wireless systems ***while roaming***. Specifically, Nokia's system selection software enables the carrier to cause the handset to scan first for its own compatible systems (Home SID List), then for compatible carriers on the Preferred SID List and next any other carriers using a compatible format, except for those on the Negative SID List.[11] However, when 911 is dialed, the Nokia multi-mode handsets ***automatically over-ride*** the Negative SID List as per the patent covering this process, which features have been incorporated in TIA/EIA 683-A. This TIA/EIA standard is referenced in Appendix A to the Nokia Proposal and is not a new "enhancement".[12]

II. The operation of these dual mode and multi-mode handsets was understood and considered by the Commission in its *Second Report and Order*

The Commission well understood that multi-mode phones would first attempt the 911 call on the acquired digital system before switching to the analog mode, at which time the handset "must override any programming in the mobile unit that determines the

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11. *Id.*

12. Override of the Negative SID List is a requirement of the patent covering this process. See www.uspto.gov and select patent number 4916728. The abstract of the Negative SID patent says "A cellular telephone unit includes selective carrier signal acquisition. Priority of acquisition is given to carrier signals associated with home system identification codes (SIDs), then to any carrier signal associated with a non-excluded SID. Any attempt to dial an emergency call (e.g., a 911call) overrides any lockout of excluded SIDs." TIA/EIA 683-A incorporates these patented features and, as mentioned above, the Application references this standard. The implication in §3.3 of the

handling of a non-911 call," e.g. the PRL.[13] "When operating in the analog mode," the handset must incorporate a 9-1-1 call selection process endorsed or approved by the Commission.

III. Nokia says, that its "method will result in a greater percentage of completed wireless 911 calls." This statement is false.

Nokia says that its method "goes further to attempt completion of 911 calls on **all** systems *on which a handset is capable of operating* and all modes – both analog and digital." *Application*, p. 3. (Italics added). As shown above, at pages 2 to 3, a Nokia multi-mode phone can only operate on **one** digital mode. Thus, Nokia's multi-mode phones are only "capable of operating" on those systems that use the same digital mode as the handset.

There is *no place in the country where competing PCS systems use the same digital mode in the same service area.*[14] As a hypothetical example, in City A, the PCS carrier operating on A-block frequencies is using TDMA digital format, the carrier using B-block is using CDMA format and the carrier on C-block is using GSM. As a result, a caller with a multi-mode Nokia CDMA/AMPS phone in City A will, best case, be able to *access* the B-block PCS system, one of the digital cellular systems (assuming there is a cellular carrier in City A using CDMA), and both of the analog cellular systems. Since a Nokia multi-mode phone in any given location in the United States will only have the

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Application that this feature is something new to be added as part of the so called "Nokia Proposal" is false.

13. Section 22.921 of the Commission's rules ("911 Call Processing Procedures") applies to "[a]ll mobile phones . . . . ***capable of operating in the analog mode.***" (Emphasis added).

14. See city by city list of systems and the digital formats they use at www.wirelessdimention.com.

capability to access one PCS system and both cellular systems, its "scan of other systems" is a complete waste of time.

There is also no place in the country where competing cellular systems use the same digital technology in the same service areas. Nevertheless, under Nokia's proposal its handset would "try [on the cellular systems] Digital A, Digital B, Analog A and Analog B. The order will be determined by the System Selection Algorithm." *Application* § 2.0. This is absurd because only one of the cellular systems, if any, will be using a digital format which is compatible with the handset.

In fact, ***no additional systems*** can be accessed under the Nokia Proposal than are already being accessed today and were being accessed at the time of the *Second Report and Order*. Thus, the statement that there will be a greater percentage of completed 911 calls is simply not true.

IV. Nokia says that its "proposed call completion method is based" on the Automatic A/B Roaming – IR method.

As Nokia notes, the Commission has established *five* basic principles with respect to 911 call completion methods. *Application* § 1.0. One such principle is that it is often desirable to complete a 911 call via the "preferred ***cellular*** carrier" because such "routing minimizes delay in setting up the call and encourages competition among carriers." *Second Report and Order* ¶ 28. (Emphasis added). For this reason, the Commission *conditionally* approved Automatic A/B Roaming – IR to permit several attempts to connect the 911 call to the landline carrier over the preferred ***cellular*** carrier even though that carrier might not provide the best channel of communication. This rational does not apply when the "preferred" carrier operates a PCS system so its applicability to multi-mode phones is problematic.

A. The Nokia proposal does not meet the critical conditions adopted by the Commission to mitigate against lock in and time delays in processing 911 calls when using Automatic A/B Roaming - IR

The conditions attached by the Commission to Automatic A/B Roaming are: "[i]n general terms, the handset should seek to complete the call with the non-preferred cellular carrier *if the preferred cellular carrier has not successfully delivered the call to the landline carrier within 17 seconds after the call is placed*." *Second Report and Order*, ¶ 41, (emphasis added).[15]

(1) The Nokia Proposal fails to incorporate the method prescribed by the Commission, or any other method, to overcome the Lock-in Problem

Briefly stated, lock in[16] occurs when the base station does not hear the handshake tone from the handset and thus does not connect the call to the landline telephone system. This results in either hang up or disconnect, both events being misunderstood by the handset as the successful completion of the call. Consequently, when the call is re-attempted, the caller is "locked in" to the same system and cannot escape. Nokia's proposal does not do anything at all to combat lock in. Instead, its call processing diagram shows that the "Call [is] Successful" when the handset "Receive[s a] Voice

15. Several methods of alerting the handset that its handshake signal was not received by the base station were proposed, such as sending as a unique tone from the base station.
16. Nokia uses the term "complete the call" in § 4.0 and the term "call successful" on its diagram as describing the same event. Its diagram shows that neither term means that the 911 call was connected to landline carrier. Indeed, the Nokia process and diagram set up the typical lock in scenario. There is a substantial record with respect to the lock-in problem in Docket 94-102. It is undisputed that lock in occurs approximately one third of the time when portable telephone users are located in rural and suburban areas. Both the Spielholz (suburban) and Lechuga (rural) cases involved lock in and the call detail record in Lechuga demonstrated the deadly nature of the problem. This is why a critical component of any 911 Call Completion Method is a procedure to try overcome lock in. Thus, the Commission uses the term "completed" in the *Second Report and* Order to mean that the call was *delivered to the landline carrier*.

Channel Assignment." *Application* following § 5.0. At this point in time, the handset has "completed" its task and waits for hang up or disconnect as the next normal event. As the extensive record in Docket 94-102 shows, it is *after* the voice channel assignment is received that the handset sends a handshake signal to the base station. And, it is *after* the handshake signal is received by the base station that the call is delivered to the landline carrier.

Thus, under the Nokia Proposal, a failure by the base station to receive the handshake signal and connect the call to the landline is not recognized by the handset and the handset will deem the emergency call to be "completed" or "successful" even though the caller hangs up in desperation or the base station disconnects because no handshake signal was received and no connection was made to the landline carrier. Each subsequent attempt to call 911 will be treated as the first attempt and the call will be again and again placed by the handset on the same system where the failure occurred. This is "lock in," just as described and discussed in the *Second Report and Order*.

(2) The Nokia Proposal far exceeds the maximum allowable time to deliver the emergency call to the landline carrier

All of the commentators in this proceeding agreed that seconds are critical when connecting a 911 call to the PSAP. After review of an exhaustive record on this subject, the Commission concluded that "[c]alls to 911 should in almost all cases be completed [to the landline carrier] in less than 15 seconds . . . [and] the *handset* will in any event seek to complete the call with the non-preferred carrier in no more than 17 seconds.." *Second Report and Order*, ¶ 41, (emphasis added). The Commission went on to say that "Handset *manufacturers* may elect to set *an even briefer period* to further minimize 911 call set up delays." *Id.* (Emphasis added).

Under the Nokia Proposal, "the time [to connect a 911 call] will be specified by the system operator." *Application*, p. 3. The system operator "may *adjust the call attempt time to* between 1 and *30 seconds*." *Application*, p. 4, (emphasis added).

Furthermore, Nokia says that the connection time may also be extended by processing the 911 call in accordance with the carrier's PRL programming. The PRL list typically contains 12 to 15 entries – each one taking approximately 10 seconds to try. Thus, instead of the 17 second maximum prescribed by the Commission, the use of the PRL can extend connection of the emergency call to 120 to 150 seconds – an impermissibly long time.

VI. Conclusion

The Application simply describes what Nokia's multi-mode handsets are already doing today and were doing at the time of the *Second Report and Order*. Today, when the Nokia multi-mode handset is turned on, it automatically looks for the preferred digital system in the area where it is located. If a 911 call is dialed it is handled by the preferred digital system. If the preferred digital system is unavailable, the handset automatically changes to the analog mode. It is at this point in time that, *the handset is required to "override any programming in the mobile unit that determines the handling of a non-911 call,"*[17] *such as the PRL, and practice one of the 911 call processing methods which the Commission has approved*.

Nokia obviously wants to avoid compliance with this requirement. So, it tells the Commission that its existing processing system is a "new 911 call processing method" and fabricates two reasons why it should receive Commission approval. First, it says

17. Section 22.921 of the Rules.

scanning the PRL for other preferred systems falls within the meaning and intent of the Commission's finding with respect to Automatic A/B Roaming – IR. In considering Automatic A/B Roaming – IR, the Commission found that "routing [to the preferred *cellular* carrier] **minimizes delay** in setting up the call and encourages competition." (Emphasis added). There is *only one preferred digital carrier in any given service area and the multi-mode phone automatically routes the 911 call to that carrier's system today*. The Nokia "proposal" to next scan the *Preferred Roaming List* for other preferred carriers **maximizes the delay** because such carriers will always be located outside of the service area and will be unable to handle the call.

Second, Nokia says that scanning for other systems, which are *compatible with its handset*, will "result in a greater percentages of completed wireless 911 calls." The Nokia multi-mode handset is *compatible* with only one PCS system and one digital cellular system in any given area in the United States. Thus, a scan of multiple frequency blocks in the same area is counter productive and will not result in the completion of more 911 calls.

The Nokia Proposal is a sham which does not meet any of the requirements of the *Second Report and Order*, will result in lock in and will delay many 911 calls an unreasonably long time. When stripped of its gloss, the Nokia Proposal can only be seen as an unconscionable attempt to avoid compliance with the *Second Report and Order*.

The Application is not in the public interest and should unquestionably be denied.

Very Respectfully Submitted,
Wireless Consumers Alliance, Inc.

_____

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EXHIBIT 3

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Consideration of the Application of	**)**	**WT Docket No. 99-328**
Ericsson, Inc. for approval of certain	**)**	
911 Call Processing Methods pursuant	**)**	
to the requirements of the Second	**)**	
Report and Order in Docket 94-102	**)**	

COMMENTS OF THE WIRELESS CONSUMERS ALLIANCE, INC.
IN OPPOSITION TO THE ERICSSON APPLICATION

On December 28, 1999, the Commission's Wireless Telecommunications Bureau released a public notice[1] inviting comment on Ericsson, Inc.'s (Ericsson) application (Application)[2] for approval of a proposed 911 call processing method (Ericsson Proposal) pursuant to the requirements of the *Second Report and Order* in the Wireless E911 Rulemaking, Docket No. 94-102.[3] The Ericsson

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[1] DA 99-3012.

[2] The Application is dated December 17, 1999 and file stamped by the Commission on December 29, 1999.

[3] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced E-911 Emergency Calling Systems*, Second Report and Order, CC Docket 94-102, 14 FCC Rcd 10954. (*Second Report and Order*).

Proposal applies to its "TDMA/analog capable dual mode cellular handsets."[4] Ericsson says that its proposal "is based along the lines of Automatic A/B Roaming – Intelligent Retry"[5] (Automatic A/B Roaming – IR), a method approved for use with cellular systems in the *Second Report and Order*. According to Ericsson, the only difference between the Nokia proposal, which was filed in this docket on November 10, 1999, and the Ericsson Proposal is that one covers CDMA technology and the other applies to TDMA technology.[6] We have filed Comments, Reply Comments and two *ex parte* letters which set forth, in detail, the basis for our opposition to the Nokia proposal. The analysis set forth in those documents is equally applicable to the Ericsson Application and they are incorporated herein by this reference.

Both Ericsson and Nokia intend to make *no change to their existing multimode handsets.* Ericsson argues that: (1) it is impractical to design algorithms which treat calls differently when operating in different modes, and (2) failure to "take full advantage of capabilities of multimode phones could jeopardize the most efficient and expeditious manner of completing wireless E-911 calls."[7]

(1) <u>Algorithm design is modular in nature</u>

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[4] Paragraph 2.1.
[5] *Id.*.
[6] Application, page 2.
[7] *Id.*

On May 6, 1999, we filed an extensive study in Docket 94-102, which was prepared by Giordano Automation Corp., showing that wireless telephone algorithms could be easily modified by the insertion of a few lines of code to enable the handset to select the Strongest/Adequate Signal when operating in the analog mode. Neither Ericsson nor anyone else has challenged that study. On July 28, 1999, Ericsson filed a petition for reconsideration of the *Second Report and Order* asking that the Commission extend the time "to incorporate one or more of the 911 call system selection processes endorsed or approved by the Commission."[8] On September 3, 1999, we filed an opposition to this petition and attached a statement from Instrumentation Engineering, Inc.[9] which pointed out that "Mr. Jatlow's [Ericsson's attorney] letter of November 2, 1998 to the Commission indicates that almost all of the elements of Strongest/Adequate Signal have already been incorporated into Ericsson's software. Modifications to add Strongest/Adequate Signal can certainly be accomplished within the 9-month timeframe" provided by the Commission. Indeed, in conversations with the Commission's staff, Ericsson indicated that it would be able to incorporate one of the approved 911 call system processes within 12 months.[10] Nothing was said by Mr. Jatlow at that time about the "impracticality" of using any of these methods in dual mode phones.

Indeed, Mr. Jatlow's statement that "[m]anufacturers do not design separate analog and digital modules"[11] is totally incorrect. The Giordano study contains block diagrams which illustrate the call processing method prescribed by the 553 analog standard. The

[8] Petition, page 4.
[9] Instrumentation Engineering, Inc. later acquired the GAC Engineering Division from Giordano.
[10] Notes of Dan Grosh, filed 7/22/99.
[11] Application, page 2.

analog methodology is driven by processes which are uniquely different from the digital processing methods. The analog modules are placed in a different place in the handset software and do not use the same codes as the digital processes. Thus, as has long ago been established, it is a trivial exercise to insert a few lines of code in the software controlling the analog mode.

(2) <u>The scanning process of the *existing* Ericsson dual mode phones does not comply with the Commission's requirements for the handling of 911 calls</u>.

The Ericsson handset is programmed to scan systems in the following order: "Home, Partner, Favored, or Neutral." When 9-1-1 is dialed, if "the mobile station [handset] does not receive [assignment of] an AVC [Analog Voice Channel] or DTC [Digital Traffic Channel] [during the initial scan] then the handset will scan the analog control channels and next all bands."[12] Ericsson claims that this scanning sequence will result in "a higher call *completion* rate" because the handset will have "access to two cellular bands and six PCS bands."[13]

The word "completion" as used by Ericsson means assignment of an Analog Voice Channel or a Digital Traffic Channel to the handset by the base station. This definition does not comport with the Commission's meaning of the word "completion," which is when the call is connected to the PSAP. The Ericsson handset regards the call as "completed" when

[12] Application, § 3.1.

[13] *Id.* (Emphasis added). As we have pointed out in our comments concerning the Nokia proposal, the scanning for out of the area systems is a waste of critical time. The inference that in each area the handset will have access to eight bands is false and misleading. With one exception, there will only be access in any given area in the United States to the cellular analog systems, one digital cellular system and one digital PCS system. The argument that the limited bandwidth PCS carriers will be available to carry 911 traffic is problematic because these planned systems appear

the AVC or DTC assignment is received and the handset returns a handshake signal to the base station. As the extensive record in Docket 94-102 shows, a significant number of situations, especially in suburban and rural areas, the handset's return handshake signal is too weak to be received by the base station. The base station regards the lack of a return handshake signalas a hang-up by the handset. As a result, the base station does not connect the emergency call to the landline system. When the calling party in fact then hangs up and re-dials 9-1-1 the handset tries the same system again because its software program said that the first call was successfully "completed" This process is repeated again and again until it is too late. This type of "completion" is called "lock in."

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to be designed to handle data and point to point services.

The claim that Ericsson's handsets will be able to "access two cellular bands and six PCS bands"is false.[14] On September 25, 1996, Ericsson advised the Commission in Docket 94-102 that:

> "The Commission's request is premised on the concept that '. . . ideally, a 911 call should be handled by whatever wireless system is available in the area of need and, if there are multiple systems available, by the one that will provide the quickest and most reliable and accurate response.' Ericsson agrees that the ideal would be wonderful. However, the ideal can not be achieved at this point in time because the wireless industry is operating in a competitive, environment that is not conducive to achieving interoperability with regard to the full panoply of digital standards that exist in the marketplace."[15]

In other words, as Ericsson well knows, its dual mode TDMA/Analog handset cannot access more than the two analog cellular systems and, *perhaps*, one digital cellular system and one PCS system in "the area of need."

There is nothing in the Rules which prevent a handset from scanning digital systems when 9-1-1 is dialed. For example, let's assume that the "Home" system is Cellular A which operates in the TDMA/Analog mode. A call to 9-1-1 using an Ericsson dual mode phone would probably first be attempted in the digital mode and then in the analog mode. Under the Rules, the call, if not connected to the PSAP, must then be attempted on the other analog system. Because the analog systems are the most extensive and prevalent in the United States, the probability is that, if the call can be delivered to the landline carrier at all, it will be accomplished over one of the analog systems. However, if the emergency call is not connected over either of the analog systems, there is nothing to prevent the handset from

[14] Application, page 2. See fn 12, supra, for a discussion of this contention.
[15] Page 4 - 5.

going on to try "Partner, Favored, or Neutral" systems and then all bands. Nor is there any impediment in any other similar scenario which would prevent the handset from going on to scan all bands if it was unable to connect the call to the landline network over one of the analog systems.

Both Ericsson and Nokia rely on the description of Automatic A/B Roaming initially proposed by CTIA. This process described the existing handset operations with a mandatory negative SID override when 9-1-1 was dialed. In 1998, TIA noted that the standards permitted Automatic A/B Roaming in both the analog and digital mode.[16] The essence of the early CTIA proposal and the current Nokia and Ericsson proposals are to make *no change* to the existing handset operations. However, CTIA later amended its proposal to add Intelligent Retry (Automatic A/B Roaming – IR) *and* the Commission added the very critical condition that such process must ensure that the "handset should seek to complete the call with the non-preferred cellular carrier if the preferred cellular carrier has not successfully delivered the call to the landline carrier within 17 seconds after the call is placed."[17] Neither the Nokia or the Ericsson phones contain either Intelligent Retry or comply with the Commission's requirement that they determine whether or not the call has been successfully delivered to the landline carrier. Despite these facts, both Ericsson and Nokia now attempt to use CTIA's discarded and repudiated original proposal as an illusion to lead the Commission to believe that they have adopted an approved 911 calling mode to fit both the analog and digital modes – they

[16] *Second Report and Order* at para. 31. However, Mr. Jatlow states that "the feasibility of including Automatic A/B Roaming in the dual-mode portion of multi-mode handsets had only been recently been raised." Application, page 2.

have not!

The Application is an affront to all those who have worked so hard to improve wireless E911 communications and it does not meet any of the requirements of the *Second Report and Order*, will result in lock in and will delay many 911 calls an unreasonably long time. When stripped of its gloss, the Ericsson proposal can only be seen as an unconscionable attempt to avoid compliance with the *Second Report and Order*.

The Application is not in the public interest and should unquestionably be denied.

Very Respectfully Submitted,

Wireless Consumers Alliance, Inc.

s// Carl Hilliard
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Fax: (858) 509-2937
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[17] *Second Report and order* at para. 41.

Certificate of Service

The undersigned hereby certifies that, on January 18, 2000, I caused copies of the forgoing document to be served by first class U.S. mail to the following:

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Ms. Kris Monteith
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Ms. Nancy Boocket
Wireless Telecommunications Bureau
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Mr. Daniel Grosh
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Mr. Ron Netro
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

s// Carl Hilliard
_____

EXHIBIT 4

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Consideration of the Request of Ford Automobile Company and Motorola, Inc. for authorization to manufacture and sell specialized analog handsets without the 911 Call Processing Methods required by the Commission pursuant to the requirements of the Second Report and Order in Docket 94-102.	)	**WT Docket No. 99-328**

COMMENTS OF THE WIRELESS CONSUMERS ALLIANCE, INC.
RECOMMENDING CONDITIONAL APPROVAL OF THE PETITION

On March 30, 2000, the Commission released a public notice[1] inviting comments on the petition ("Petition") filed by Motorola, Inc. ("Motorola") with the Commission on March 24, 2000, pursuant to Section 1.925 of the Commission's rules,[2] requesting a waiver of Section 22.921.[3] Section 22.921 states that all "mobile phones manufactured after February 13, 2000, and capable of operating in an analog mode . . . must incorporate a special procedure for processing `'9-1-1'' calls." Motorola, on behalf of itself and the Ford Automobile Company ("Ford"), is

[1] DA 00-726.

[2] 47 C.F.R. § 1.925. Subsection (b)(4) of Section 1.925 states that "Applicants requiring expedited processing of their request for waiver shall clearly caption their request for waiver with the words "WAIVER–EXPEDITED ACTION REQUESTED." Such a request was *not* made.

[3] 47 C.F.R. § 22.921.

asking the Commission for permission "to manufacture 30,000 additional specialized analog handsets for its Telematics product without the enhanced call completion software modifications" required by Section 22.921 for use in Ford automobiles.[4] (*Pet*. 3). The reason given is that the 911 call processing mode used by Motorola in its mobile phone conflicted with "the Telematics system built into the electronics of the [Ford] car."[5] (*Pet*. 2). As a result, "*Ford and Motorola are requesting this waiver* for the remainder of the analog Telematic product life until these systems are replace [sic] with a Digital E911 capable handset and the Telematics system later this year." (Emphasis added) (*Pet*. 4). These noncompliant Telematics phones will be installed by Ford in new automobiles at the Ford manufacturing plant. Motorola states that it will place "in the installation instruction manuals directions for the assembly line or dealer technicians to program the phone for automatic A/B or B/A operation." The Petition says that "[t]his should further aid this limited number of Telematics users *in receiving access to 911 in an emergency*." (Emphasis added). (*Pet*. 4).

A description of Motorola's Telematics system can be found at:

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[4] "Motorola plans to cease manufacture of these handsets by early May of 2000." However, an "outsourcing contractor," will be manufacturing these units until July of 2000. Petition ("*Pet*.") 4.

[5] There is no indication of which of the 911 call processing modes approved by the Commission was used. A quick check with our engineers indicates that it is unlikely that the Strongest Signal mode would have caused any such problems.

http://www.motorola.com/ies/telematics. The text and diagrams on this web site indicate that ***A TELEMATIC S USER IS NOT ABLE TO DIAL 911.*** According to the descriptions given, when the emergency button in the automobile is pushed by the user, the Motorola phone (called "Telematics Communications Unit or TCU") connects the caller to "a central service center," which, in this instance, is operated by Ford. This center provides a number of services, including "dispatching emergency services," i.e. the Ford service center operator calls the 911 center over the landline telephone system.

When the Commission found that handsets must "incorporate a special procedure for processing `'9-1-1'' calls" it clearly contemplated that users *would be able to directly dial 911*.[6] Motorola, in signing the Petition, acknowledges that the Telematics units it manufactures fall within these rules and *implies* that a user will be able to dial 911 even though this is apparently not the case. It is useless for Motorola to install E911 features in mobile phones *knowing* that such features cannot be accessed by the user. If the user cannot dial 911, then all of the safeguards adopted by the Commission to enhance 911 call completion will have been by-passed. Moreover, a Ford service center operator does not have the same level of priority access to the 911 operators as calls made by the user directly to 911. This problem may well cause a substantial delay in the dispatch of critical emergency services. As the Commission has already concluded, *any* delay in reaching 911 is

[6] See: *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, Second Report and Order*, CC Docket No. 94-102, 14 FCC Rcd 10954 (1994) ("*Second Report and Order"*).

not in the public interest.[7]

[7] *Id.*

In a letter to the Chief of the Wireless Telecommunications Bureau dated February 11, 2000, Motorola advised that it had "successfully incorporated enhanced call completion features . . . in both the analog *and digital modes* of operation." (Emphasis added). On February 17, 2000, the Chief of the Wireless Telecommunications Bureau approved a request by Motorola to waive Section 22.921 through April 1, 2000 to give it additional time to implement the software changes for its TDMA product line.[8] According to a report in RCR, the new Motorola Telematics unit will be a "*dual mode* phone designed specifically for Ford's telematics services."[9] Thus, based on Motorola's representations, the Commission should be able to assume that the E911 features mandated by Section 22.921 *will be available to all users of* Motorola's new mobile phones when operating in either the digital or analog modes.

We submit that it would be a violation of Section 22.921 for Motorola, or any manufacturer, to make Telematics mobile phones with a wink and a nod toward the Commission's objectives in establishing E911 safety procedures. The numbers of these systems in use today may be small but the projections for future use are substantial. We suggest that the Commission approve Ford and Motorola's request on the specific conditions that: (1) Ford programs the phones manufactured under any waiver for automatic A/B or B/A operation and insures that emergency calls to its service center over non-preferred cellular systems will not be intercepted by an operator demanding credit card information in order to process the call, and, (2) all Telematics mobile phones manufactured by Motorola after May 2000 must be designed and installed so that the user will have the unfettered ability to directly dial 911.

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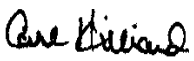
[8] WT Docket No. 99-328, Order released February 18, 2000 (DA 00-324).

[9] March 20, 2000, p. 20. (Emphasis added). "Dual mode" is analog/digital. (*Pet*. 3).

Respectfully submitted,



Carl Hilliard

April 7, 2000

Certificate of Service

The undersigned hereby certifies that, on April 7, 2000, I caused copies of the forgoing document to be served by first class U.S. mail to the following:

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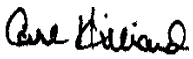

EXHIBIT 5

VERNER · LIIPFERT
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CHARTERED

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December 30, 1999

HAND DELIVERY

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: 911 Call Processing Method That Includes Digital and Analog Modes Proposed by Nokia, Inc.
WT Docket No. 99-328

Dear Ms. Salas:

On December 20, 1999, the Wireless Consumers Alliance filed an *ex parte* letter in the above-captioned proceeding in which it makes a number of incorrect and misleading statements that Nokia wishes to correct. Nokia also is providing additional information so that the public and the Commission staff can better understand the clear public interest in granting our proposal to allow multi-mode wireless phones to complete emergency calls using both the analog and digital channels on which they are capable of operating. Grant of our request will increase the chances that a consumer in distress will be successful in quickly summoning emergency assistance using their multi-mode wireless phone.

In both its letter and its comments in this proceeding, the Alliance opposes allowing Nokia's multi-mode handsets to use both the digital and analog modes they are capable of operating on for emergency calls. This is a misguided position that will measurably lessen the chances of completing emergency 9-1-1 calls for *millions* of wireless subscribers. The result of

the Alliance's position would be that millions of multi-mode (including multi-band) handset users would be disadvantaged in using the full digital capabilities of their handsets when they are most desperate to complete 9-1-1 calls.

The letter from the Alliance opposing Nokia's request makes clear that its opposition is based upon mistakes in fact and technology. First, considering PCS at 1900 MHz, as the Commission is well aware, there were an estimated *six million plus* digital users in December, 1998, subscribing to wireless telephony services. These are not personal digital assistant, such as the Palm Pilot services, as the Alliance mistakenly states. They are full-fledged digital two-way telephony systems functionally similar to cellular systems. Both cellular and PCS systems may provide ancillary data services, but voice telephony is universally provided. One year ago -- in December, 1998 -- there existed up to 4 PCS systems constructed and in service in every urban area of the United States in the 1900 MHz PCS bands.[1]

Second, within the cellular (800 MHz) bands, digital systems are less crowded because digital systems acquire additional capacity through gains in efficiency. Consumers and carriers are converting to digital at an astounding pace to secure the price and service benefits of digital technology. The number of digital handsets grew at the annual percentage rate of 160 percent between 1997 and 1998.[2] And yet, despite this rapid migration to digital technology, the Alliance opposes Nokia's proposal that digital multi-mode phones quickly implement a 9-1-1 call completion method that complies with the Commission's intent when it adopted rules for analog systems.

In both its letter and its comments, the Alliance states that Nokia's proposal does nothing to address the "lock in" problem and that, in fact, Nokia's handsets would lock in to a system on which it failed to complete the emergency call.[3] This is not the case. Nokia's phones will be designed to combat lock-in in the same manner that the Commission has allowed for other call completion methods.

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1 These figures are for 1998, as set forth in the Commission's *Fourth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, FCC 99-136, released June 24, 1999, at p. 31 and Table 10 at p. B-16.

2 *Id.* at Table 5, p. B-7.

3 Alliance Comments at 7; Letter at 2.

In the *Second Report and Order*, the Commission noted that any call completion method "should address the lock in problem in a reasonable and effective way that substantially reduces or eliminates the likelihood that a 911 call might be locked in on the system of a cellular carrier that is unable to provide a usable voice communication channel."[4] In its discussion of the approved Automatic A/B Roaming - Intelligent Retry Method, the Commission noted that the sequential algorithm procedure that the method employs, whereby the handset would automatically switch between the preferred and non-preferred cellular carriers after some set length of time if the call was not completed on one of the carriers, "effectively addresses the lock-in problem."[5] In addition, the Commission stated that the 17-second time limit it was mandating for the initial call attempt would "also provide additional protection against any lock-in of calls, beyond 17 seconds, with the preferred carrier."[6]

Nokia's multi-mode phones will employ several procedures that will eliminate the likelihood that a 9-1-1 call will be locked in to any one system. First, as with the Automatic A/B Roaming - Intelligent Retry Method, when operating in emergency call mode, Nokia's proposed call completion method will employ a sequential algorithm whereby the handset will automatically attempt the call on another system if the call is not completed on one system. Moreover, if for some reason a system is lost while the handset is operating in emergency mode, the phone will remember the system on which the previous access attempt was made and it will then attempt to complete the call on the next available system. This will help to ensure that the phone will not continually seek to attempt to complete the call on a system that it cannot access.

Second, Nokia would like to clarify that our multi-mode handsets will comply with the time limits for access attempts approved by the Commission for the Automatic A/B Roaming - Intelligent Retry Method.[7] In the *Second Report and Order*, the Commission stated that "the

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[4] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced E-911 Emergency Calling Systems,* Second Report and Order, 14 FCC Rcd 10954 at para. 29 (1999) ("*Second Report and Order*").

[5] *Id.* at para. 35.

[6] *Id.* at para. 41.

[7] In our initial letter requesting approval of our multi-mode call completion method we stated that the time per access attempt for digital systems was controlled by the carrier and thus could exceed 17 seconds. However, this time control is part of the digital standards and is not a bar to a handset moving from one channel to another within a predetermined amount of time. In fact, as noted above and recognizing the Commission's concern about unnecessary delays in emergency call set-up times, Nokia will modify its multi-mode handsets to switch to a subsequent system if the call cannot be completed within 17 seconds if the Commission approves its request.

handset should seek to complete the call with the non-preferred cellular carrier if the preferred cellular carrier has not successfully delivered the call to the landline carrier within 17 seconds after the call is placed."[8] We will apply the same time limit for all channels irrespective of whether the handset is operating in the digital or the analog mode. This means that at a maximum our multi-mode handsets will try to complete a call on a channel (digital or analog, cellular 800MHz or PCS 1900 MHz) for 17 seconds before attempting to complete the call on the next channel.

These steps will substantially reduce any chance that our multi-mode handsets could "lock in" on any one system, and will substantially reduce the time necessary for call set up and completion. In addition, Nokia wishes to clarify and correct for the record a concern raised by the Alliance. In its comments, the Alliance stated that handsets employing our proposed method would spend "an impermissibly long time" trying to access systems that the phone is capable of operating on.[9] However, this reflects a misunderstanding of how our handsets operate to determine whether a channel can be used or not. Rather than spending approximately 10 seconds to make a determination if it may operate on a given channel, the handset makes a quick scan of all channels it is capable of operating on. The amount of time needed to tune the synthesizer to the channel is typically in the range of 20-30 milliseconds. Thus in a worst case, the handset will scan for 42 potential PCS channels and 4 potential 800 MHz digital channels for a total of 46 digital channels, with each of these scans taking a maximum of 30 milliseconds, for a total of 1.380 seconds, before a channel is found. Once the handset has found an available channel (based on RSSI), it will attempt to complete the call immediately. As we stated before, all negative preferences will be overridden.

Nokia is committed to ensuring that consumers using our multi-mode phones are able to contact 9-1-1 rapidly. Our proposal has the advantage of allowing for relatively rapid rollout of these increased capabilities, whereas otherwise consumers would not have them. For reasons that truly are baffling, the Alliance advocates a position that in some instances will delay or even prevent a connection to 9-1-1 where it could be rapid and reliable using digital handset capabilities. Granting the Nokia request will have clear substantial benefits to the public in the increasingly digital world, and we reiterate our request for grant of permission to implement this capability at the soonest possible time.

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[8] *Second Report and Order* at para. 41.

[9] Alliance Comments at 8.

As we noted in our original request, it will take 4 months to implement this new 9-1-1 call completion method, and therefore expedited action was requested. That was on October 27, and referred to the Feb. 13 deadline. We therefore are filing concomitant with this reply a request for waiver of the February 13 deadline for 4 months from Commission action on this request. We request expeditious grant so as to minimize the time necessary beyond February 13.

Respectfully Submitted,

David R. Siddall, Esq.
Counsel to Nokia, Inc.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on this 30th day of December, 1999, I caused copies of the foregoing document to be served by first-class U.S. mail to the following:

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Vance W. Schuemann

EXHIBIT 6

FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

DA 03-1868
May 30, 2003

Mr. Robert L. Pettit
Wiley Rein & Fielding LLP
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Washington, D.C. 20006

Dear Mr. Pettit:

This letter responds to your letter on behalf of Nokia Inc. (Nokia) dated May 27, 2003,[1] seeking clarification of the Wireless Telecommunications Bureau's (Bureau's) *Nokia Waiver Order*.[2] You explain that a clarification of the *Nokia Waiver Order* is needed so that Nokia's training program will accurately cover its requirements.

In the *Second Report and Order*,[3] the Commission adopted section 22.921 to help improve 911 call completion.[4] In that order, the Commission delegated authority to the Wireless Telecommunications Bureau (Bureau) to consider and approve, deny, or approve with modification new or revised 911 call processing modes.[5]

On October 27, 1999, Nokia filed a letter with the Bureau requesting approval for a 911 call completion method for Nokia's multi-mode products.[6] Nokia's method was substantially similar to the Automatic A/B Roaming-Intelligent Retry (A/B-IR) method approved by the Commission.[7] Based on its delegated authority and its finding that the method appeared reasonable in both analog and digital modes, the Bureau approved Nokia's method[8] subject to two conditions:

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1 *See* Letter from Robert L. Pettit, Counsel for Nokia, Inc., to John Muleta, Chief, Wireless Telecommunications Bureau, Federal Communications Commission (May 27, 2003) (Request).

2 911 Call Processing Modes, WTB Docket No. 99-328, *Order*, 15 FCC Rcd 1911 (2000) (*Nokia Waiver Order*).

3 Revision of the Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Second Report and Order, 14 FCC Rcd 10954 (1999) (*Second Report and Order*).

4 47 C.F.R. § 22.921. This rule requires new analog wireless handsets, and multimode handsets when operating in analog mode, to be able to complete 911 calls to either analog carrier in an area, regardless of the programming of the handset for non-911 calls. The Commission sought to implement this rule through an equipment manufacturing requirement and its equipment authorization process while believing that implementation of the rule would require a relatively minor change to the phone's programming. *See Second Report and Order,* 14 FCC Rcd at 10992- 93.

5 *Second Report and Order*, 14 FCC Rcd at 10993, 10995.

6 Letter from David Siddall, Counsel to Nokia, to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Oct. 27, 1999 (Nokia's 1999 Request).

7 In the *Second Report and Order*, the Commission approved three proposed 911 call processing modes including the A/B-IR method, while stating general principles for other acceptable modes and encouraging the development of further improvements in 911 call completion. *See Second Report and Order* at 10993. *See also Nokia Waiver Order,* 15 FCC Rcd at 1913.

8 *Nokia Waiver Order,* 15 FCC Rcd at 1914-15. The Bureau also granted Nokia additional time to complete software changes to implement its method. *See id.* at 1915.

First, the *Nokia Waiver Order* approved, as a feature in Nokia's method, customer feedback regarding the status of the call until the call is completed.[9] Accordingly, the handset must provide effective feedback to inform the user when 911 call processing is underway and has not finished.

Second, Nokia's method included a time limit for access attempts similar to the time requirement for the A/B-IR method.[10] Under the *Nokia Waiver Order,* the 17-second time limit is applicable to access attempts.[11] The *Nokia Waiver Order* approved Nokia's method with the understanding that the handset must first attempt to complete the 911 call with the carrier operating the presently acquired system, and if the access attempts on that system are not successful within 17 seconds, the handset must automatically attempt to make the call on another network.[12] Under Nokia's algorithm, as approved, access attempts are deemed unsuccessful if the handset has not received a voice or traffic channel assignment within 17 seconds. Accordingly, the initial access attempts on the presently acquired system must not exceed 17 seconds, regardless of whether the handset is operating in the digital or analog mode, before the handset attempts to call on another network.[13]

Overall, then, for purposes of its training program, Nokia may consider that its revised 911 call processing method was approved as described in its October 27, 1999 request, subject to the two conditions described above and, specifically, to the modification of its handsets to set a time limit on access attempts as described in its December 30, 1999 *ex parte* Letter.

I hope that this clarification will assist you in ensuring Nokia's compliance with the requirements of the *Nokia Waiver Order.*

Sincerely,

John B. Muleta

Chief,
Wireless Telecommunications Bureau

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9 *Nokia Waiver Order,* 15 FCC Rcd at 1912-13, and 1915.

10 In response to WCA's comments that Nokia's proposal did not specify the duration of the call attempt with the preferred carrier, Nokia clarified that its multi-mode handsets will comply with the time limits for access attempts approved by the Commission for the A/B-IR method, specifically the 17-second limit, whether the handset is operating in the digital or the analog mode. Letter from Davis R. Siddall, Counsel to Nokia, Inc., to Magalie Roman Salas, Secretary, Federal Communications Commission, WT Docket No. 99-328, at 3, n.7 (Dec. 30, 1999) (Nokia December 30 *ex parte* Letter). The 17-second time limit for initial call attempt with the preferred carrier limits possible lock-in problems as well as other delays when the call cannot be handled by that carrier for some reason. *See Nokia Waiver Order,* 15 FCC Rcd at 1913. *See also Second Report and Order,* 14 FCC Rcd at 10988.

11 *See Nokia Waiver Order,* 15 FCC Rcd at 1913-14.

12 *Nokia Waiver Order,* 15 FCC Rcd at 1913-15.

13 The Bureau found that the carrier operating the "presently acquired system," normally the caller's preferred carrier, is likely to be the carrier best able to deliver the call quickly and reliably while supporting the handset's features, such as location capability when that feature becomes available. *See Nokia Waiver Order,* 15 FCC Rcd at 1914.

EXHIBIT 7

Hon. Marsha Pechman

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

JULIE McMURRY, on behalf of herself and all others similarly situated, Plaintiff, vs. NOKIA CORPORATION, NOKIA, INC., and AT&T WIRELESS SERVICES, INC., Defendants.	No. CV-02-2319 P DECLARATION AND EXPERT REPORT ON NOKIA CELL PHONE NON-COMPLIANCE WITH 47 C.F.R. § 22.921 BY ROBERT G. ZICKER **FILED UNDER SEAL**

COHEN, MILSTEIN, HAUSFELD & TOLL, P.L.L.C.
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I. QUALIFICATIONS

1. I am a consultant in the telecommunications field. I base this declaration on the knowledge acquired during a career spanning over forty years of active employment in telecommunications, the last twelve years of which were spent working exclusively in the cellular telephone industry. My work in cellular telephony involved the design and development of new products, services and systems. This design and development has resulted in my being awarded forty-six patents covering cellular telephone systems, methods and apparatus. My resume is attached along with a list of those cases in which I have qualified and testified as an expert over the last four years. I have been qualified as an expert in both state and federal courts.

II. PURPOSE OF REPORT

2. This report is being prepared at the request of plaintiff and her counsel in the above-captioned action and describes the test of certain Nokia cell phones to determine whether or not they comply with the FCC order prescribing the manner in which these cell phones must operate when the user is attempting to reach help by calling 911.

III. TEST CRITERIA AND EQUIPMENT CONFIGURATION

3. The Federal Communications Commission ("FCC") issued an order codified at 47 C.F.R. § 22.921[1] ("Rule"), to ensure that persons dialing 911 on their cell phone will be connected with the 911 operator as expeditiously as possible. The FCC Order applies to multimode, dual mode and analog-only cell phones. Multimode and dual mode cell phones are capable of on operation on both digital and analog systems. Analog systems were developed in the 1980s and virtually every

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[1] See In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Second Report and Order FCC 99-96 CC Docket No. 94-102 RM-8143 (FCC June 9, 1999) ("FCC Order") attached as Exhibit A to Declaration of Keelyn M. Friesen.

populated part of the country has analog service. Digital systems have been more recently deployed and are located in the highly populated and traveled areas. Multimode and dual mode cell phones switch to analog service when there is no digital service available either because the caller is outside the area or the digital network is congested. There are two analog systems that are called generically called the "A" system and the "B" system by the FCC.

4. The carrier to which the customer subscribes programs the cell phone to function on systems that are operated by the carrier or by other carriers that have agreed to handle its traffic. These systems are called "preferred" systems. The same programming prevents the cell phone from using systems that are not selected ("non-preferred"). For example, if the A system was preferred for use in Seattle by AT&T Wireless, the cell phone would usually be programmed to prevent access to the B system in Seattle.

5. The purpose of the FCC Order is to give the caller 911 access to both the A system and the B system to increase the chance of the emergency call being completed. The FCC Order was the culmination of almost five years of public debate on this topic and it requires the manufacturers of multi mode, dual mode and analog only cell phones to choose one of three approved 911 dialing methods. Each of the cell phones tested purportedly used the "Automatic A/B – Intelligent Retry" method.[2]

6. In order for the cell phone utilizing the "Automatic A/B – Intelligent Retry" method to comply with the FCC Order, the cell phone must:

a. recognize when a call to 911 is dialed;

b. override any internal software restrictions on the A/B system selection process;

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[2] See FCC Order at ¶¶ 33, 39, 40 and 41.

c. indicate both audibly and visually to the caller that an emergency call is being processed;

d. attempt to connect the call via the preferred system if it detects a signal from that system;

e. if the preferred cellular system is not available, the cell phone must immediately seek to complete the call on the non-preferred cellular system;

f. if the preferred cellular system is available, but has not successfully connected the call to the 911 operator within 17 seconds after the call is placed, the cell phone must attempt to complete the call on the non-preferred cellular system; and

g. if the call is not completed within 17 seconds on the non-preferred system, the cell phone should switch back to the preferred system and try again. The cell phone should continue to switch back and forth until the call is connected to the 911 operator.

7. I established a test that would confirm compliance with this method. I utilized a Screen Room to isolate the test environment from any potential outside signals from the operating cellular systems in that area. Two Hewlett Packard cell tower simulators were set up in the screen room. These simulators mimic a cellular system and generate the same signals over the same radio channels as an operating cell tower. This is the standard procedure in the industry for tests of this kind. The technical specifications of the test follow:

a. An HP8924E (SN US39220478) was configured as the preferred system and was programmed to transmit the System Identity code (SID) corresponding to the signal from the cell phone's preferred system. The control channel was set to 345 with an output power level set to -70dBm and the mobile access power level was programmed to power level 7, the minimum setting.

b. An HP8920C (SN US39064788) was configured as the non-preferred system. The control channel was set to 321 with an output power level set to -80dBm and was programmed with a mobile access power level of 4.

c. The signals from both simulators were cabled together via a "tee" connector to a Radio Shack model 17-338 external antenna coupler which was coupled to the cell phone under test.

d. Each cell phone was operated with its integral battery.

8. I designed this test environment to emulate the "lock-in" problem addressed in the FCC Order. "Lock-in" occurs when a user places a call on the preferred system from a location where the signal from the cell tower can be heard by the cell phone but the return signal from the cell phone to the cell tower is too weak for voice conversations. In the lock-in scenario, the cell phone does not recognize the fact that the call was not connected to the called party and when the call is placed again it redials the same sequence, i.e. the cell phone is "locked-in" to the preferred system and will not switch to another system that might be able to connect the call. The FCC Order requires special dialing procedures be employed to avoid lock-in when calls are made to 911.

IV. FINDINGS

9. I tested eight Nokia cell phones utilizing the test setup described above. There was no digital signal present and all of the cell phones successfully changed to the analog mode. Under the conditions of the test there was sufficient signal from the preferred system for a call attempt but not enough to complete the call. The cell phone should attempt to place the 911 call on the preferred system and, after 17 seconds, changed to the non-preferred system and placed the 911 call again. Because we did not simulate an operator connection, the cell phone should have then switched back to the preferred system after 17 seconds and repeated the process.

10. All of the cell phones failed to comply with the FCC Rule. Only one detected the failure to complete a 911 call. All others behaved as if the call had gone through to the 911 operator, even though that was not possible under the test conditions. Two cell phones, the 6160 and the 5160,

failed to switch to the non-preferred system even when the signal from the preferred system was turned off, which means that if the caller could not reach 911 on the preferred system, they could not get through at all. Four cell phones, the 6180, 5185, 3360 and 6360, suffered from lock in, and would not switch until after the preferred signal was completely removed. One cell phone, the 7160, considered the call successful and failed (as all the cell phones did except the 8260) to recognize that the call had not been completed. The 8260 did cycle back and forth between systems, but took 30 seconds to do so instead of the required 17. In addition, none of the cell phones provided audio confirmation that an emergency call was being processed.

11. The detailed results of each test are reported below.

12. **Model 6160**

a. The 6160 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. Nevertheless, the 6160 considered the 911 call successful because it received a voice channel assignment from the simulator. A voice channel assignment is only the first step in setting up a call. At this early stage, no communication is possible, yet the cell phone acted as if the emergency call had been completed. At no point during the test should the cell phone believe a call had been completed.

f. Further, the 6160 would not switch to the non-preferred system even with the preferred system signal completely removed. It went to "No Service". This should not happen. If a maximum of 17 seconds has elapsed without the call

connecting to the 911 operator via the preferred system, the cell phone must switch to the non-preferred system and try to complete the call. Specifically, it must not require the complete removal of the preferred system signal to switch. Here, even when the signal was removed, the cell phone did not switch to the non-preferred system. This is worse than lock in, and is the way phones behaved before the FCC Order. That is, if a person could not get through to 911 via the preferred system, they could not get through at all.

g. After going into "No Service," the cell phone cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

13. **Model 5160**

a. The 5160 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. Nevertheless, the 5160 considered the 911 call successful because it received a voice channel assignment from the simulator. A voice channel assignment is only the first step in setting up a call. At this early stage, no communication is possible, yet the cell phone acted as if the emergency call had been completed. At no point during the test should the cell phone believe a call had been completed.

f. Further, the 5160 would not switch to the non-preferred system even with the preferred system signal completely removed. It went to "No Service". This should not happen. If a maximum of 17 seconds has elapsed without the call connecting to the 911 operator via the preferred system, the cell phone must switch to the non-preferred system and try to complete the call. Specifically, it must not require the complete removal of the preferred system signal to switch. Here, even when the signal was removed, the cell phone did not switch to the non-preferred system. This is worse than lock in, and is the way

phones behaved before the FCC Order. That is, if a person could not get through to 911 via the preferred system, they could not get through at all.

g. After going into "No Service," the cell phone cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

14. **Model 5180**

a. The 5180 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. Nevertheless, the 5180 considered the 911 call successful because it received a voice channel assignment from the simulator. A voice channel assignment is only the first step in setting up a call. At this early stage, no communication is possible, yet the cell phone believed that a call had been completed. At no point during the test should the cell phone believe a call had been completed.

f. The 5180 would not switch to the non-preferred system until the preferred system signal was completely removed. This should not happen. If a maximum of 17 seconds has elapsed without the call connecting to the 911 operator, the cell phone must switch to the non-preferred system and try to complete the call. It must not require the complete removal of the preferred system signal. This is the exact problem – lock in – that the FCC Order was designed to prevent.

g. The cell phone then cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

15. **Model 6185**

a. The 6185 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. Nevertheless, the 6185 considered the 911 call successful because it received a voice channel assignment from the simulator. A voice channel assignment is only the first step in setting up a call. At this early stage, no communication is possible, yet the cell phone acted as if a call had been completed. At no point during the test should the cell phone believe a call had been completed.

f. The 6185 would not switch to the non-preferred system until the preferred system signal was completely removed. This should not happen. If a maximum of 17 seconds has elapsed without the call connecting to the 911 operator, the cell phone must switch to the non-preferred system and try to complete the call. It must not require the complete removal of the preferred system signal. This is the exact problem – lock in – that the FCC Order was designed to prevent.

g. The cell phone then cleared the emergency call status and returned to the "idle" state. When a call is cleared, if the caller has not gotten through, the caller must hang up and dial again. The cell phone will not do so automatically. What must happen under the FCC Order is that the cell phone keeps trying until the call is completed.

16. **Model 3360**

a. The 3360 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. The 3360 kept repeating the attempt to connect via the preferred system until the preferred system signal was completely removed. This should not happen. If a maximum of 17 seconds has elapsed without the call connecting to the 911 operator, the cell phone must switch to the non-preferred system and try to complete the call. It must not require the complete removal of the preferred system signal. This is the exact problem – lock in, in this case repeatedly trying and failing to connect with 911 – that the FCC Order was designed to prevent.

f. Once on the non-preferred network, the 3360 did not detect that the non-preferred system failed to connect to the 911 operator, but considered the call successful when it tuned to the voice channel assigned by the simulator. Thus, the 3360 acted as if the emergency call had been completed even though the cell tower simulator had no landline connection and no call was actually completed. In the real world, this means that even though the call was not put through to the 911 operator the cell phone would just stop trying to connect. What should happen under these circumstances is that the cell phone must switch systems again after a maximum of 17 seconds and replace the call. It did not.

g. The cell phone then cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

17. **Model 6360**

a. The 6360 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. The 6360 kept repeating the attempt to connect via the preferred system until the preferred system signal was completely removed. This should not happen. If a maximum of 17 seconds has elapsed without the call connecting to the 911 operator, the cell phone must switch to the non-preferred system and try to complete the call. It must not require the complete removal of the preferred system signal. This is the exact problem – lock in, in this case repeatedly trying and failing to connect with 911 – that the FCC Order was designed to prevent.

f. Once on the non-preferred network, the 6360 did not detect that the non-preferred system failed to connect to the 911 operator, but considered the call successful when it was assigned a voice channel by the simulator. However, this assignment does not mean that a call has been completed. Thus, the 6360 believed a call had been completed even though the cell tower simulator had no landline connection and no call was actually completed. In the real world, this means that the cell phone would just stop trying to connect even though the emergency call did not go through to the 911 operator. What should happen under these circumstances is that the cell phone must switch systems again after a maximum of 17 seconds and try to place the call again. It did not.

g. The cell phone then cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

18. **Model 7160**

a. The 7160 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. The 7160 took 35 seconds before it determined that the preferred system had failed to connect the call and switched to the non-preferred system and automatically re-attempted the call. It must switch after a maximum of 17 seconds.

f. Once on the non-preferred system, the 7160 did not detect that the non-preferred system failed to connect to the 911 operator, but considered the call successful when it tuned to the voice channel assigned by the simulator. However, changing to the assigned voice channel does not mean that a call has been completed. The 7160 acted as if the emergency call had been completed even though the cell tower simulator had no landline connection and no call was actually completed. In the real world, this means that the cell phone would just stop trying to connect even though the call did not go through to the 911 operator. What should happen under these circumstances is that the cell phone must switch systems and try the call again after a maximum of 17 seconds. It did not.

g. The cell phone then cleared the emergency call status and returned to the "idle" state. When a call is cleared, the caller must hang up and dial again. The FCC Order requires that the cell phone not clear the call and keep trying until the call is connected.

19. **Model 8260**

a. The 8260 recognized 911 as an emergency call and attempted to connect via the preferred system by sending the calling information over the control channel.

b. The preferred carrier simulator received the calling information and assigned a voice channel to the cell phone.

c. The cell phone tuned to the assigned voice channel and sent a response signal to the simulator.

d. The call was dropped by the preferred simulator because the response signal was too weak to be heard (this was an intentional part of the test).

e. The 8260 took 30 seconds before it determined that the preferred system failed to connect the 911 call and automatically switched to the non-preferred

system and re-attempted the call. It must switch after no more than 17 seconds.

f. The 8260 then determined that the non-preferred system also failed to connect to the landline network but again took 30 seconds to do so before switching back to the preferred system and re-attempting the call. It must switch after no more than 17 seconds. The 8260 kept repeating this cycle of switching between systems but taking 30 seconds to do so instead of the required 17 seconds maximum.

V. COMPENSATION

20. I am being compensated at a rate of $250.00 per hour for my work in preparing this report.

21. I declare under penalty of perjury under the laws of the State of Alabama that the foregoing is true and correct.

Executed on December 12th, 2002, at Southside, Alabama.

ROBERT G. ZICKER